



Overview of the 1st Quarter 2007 Surveillance and Maintenance Report for the DOE LM Rocky Flats Site

Rocky Flats Stewardship Council

August 6, 2007



Rocky Flats Site Surface-Water Monitoring and Operations

1st Quarter 2007

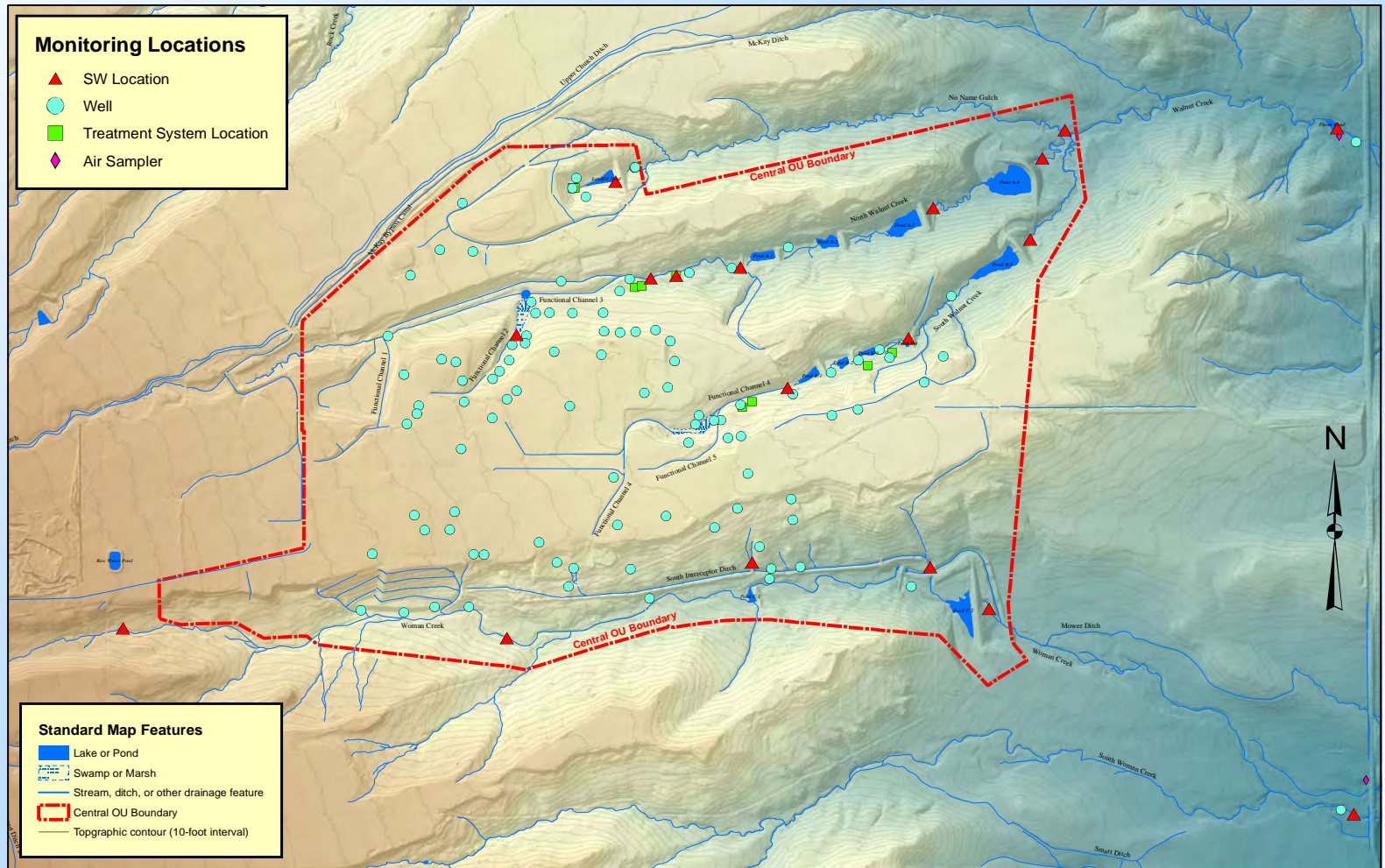


George Squibb, S.M. Stoller



1CQ07 Environmental Monitoring Locations

Surface Water Locations: 18
Groundwater Wells: 100
Treatment System Locations: 11





Pond Operations – 1st Quarter CY07

- Terminal Pond Discharges
 - Pond A-4; 3/1-3/13; 10.25 MG
 - Pond B-5; 3/1-3/13; 7.47 MG
- Transfers
 - A-3 to A-4
 - 1/10-1/24; 5.68 MG
 - 2/7-2/12; 4.95 MG
 - 3/13-3/28; 7.67 MG
- Pond Levels
 - As of 3/31/07 Ponds A-3, A-4, B-5, C-2, and the Landfill Pond were holding approximately 21.8 MG (22.1% of capacity)



Current Pond Levels (8/2/07)

- Landfill (20.9%)
- A-3 (21.3%)
- A-4 (11.5%)
- B-5 (23.9%)
- C-2 (19.6%)



Hydrologic Data – 1st Quarter CY07

- Precipitation
 - 3.14” total precipitation
 - 231% of WY93-06 average
- Flow Rates (percent of average)
 - GS01 (366%)
 - GS03 (126%)
 - GS10 (107%)
 - SW027 (254%)
 - SW093 (258%)





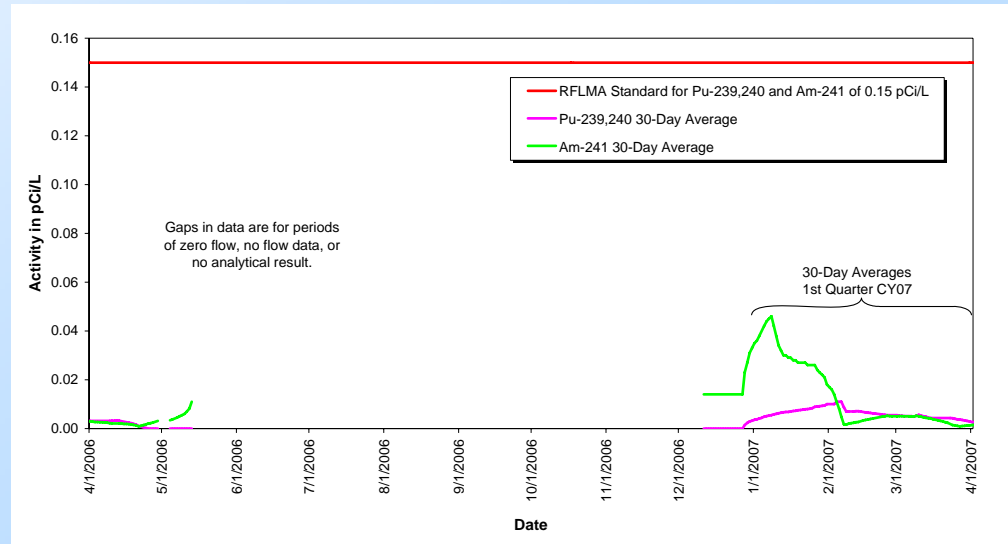
Point of Compliance (POC) Monitoring – 1st Quarter CY07

- Monitoring at RFCA POCs has continued uninterrupted since 10/1/96
 - GS01: Woman Cr. At Indiana Street
 - GS03: Walnut Cr. At Indiana Street
 - GS08: Pond B-5 Outlet
 - GS11: Pond A-4 Outlet
 - GS31: Pond C-2 Outlet
- All water-quality data at the RFCA POCs remain below the applicable standards using all available data

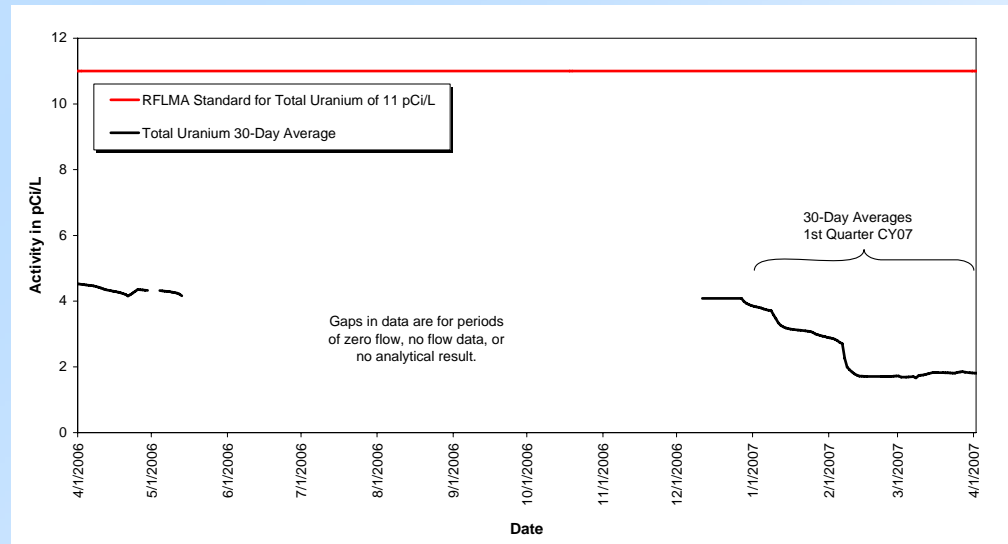


POC GS01

- Plutonium and Americium



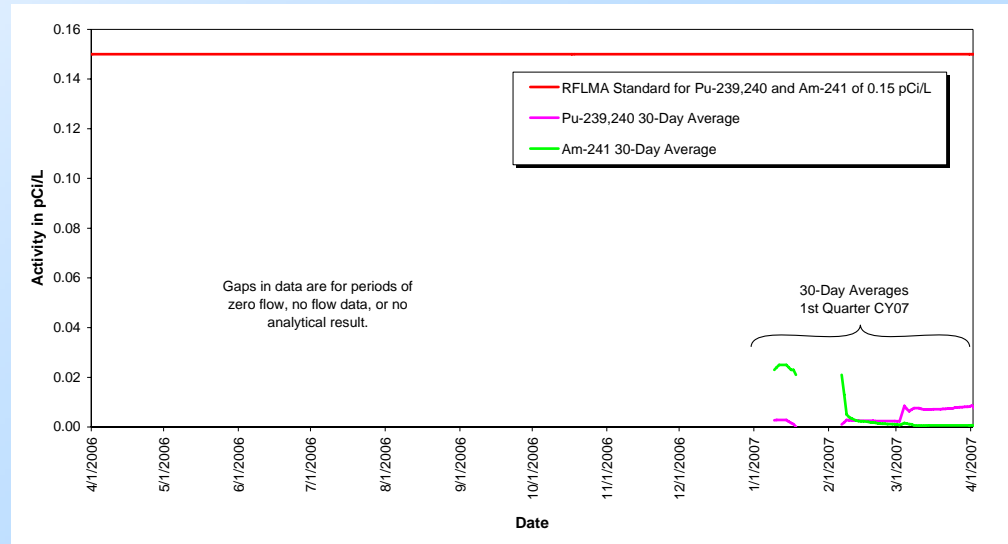
- Total Uranium



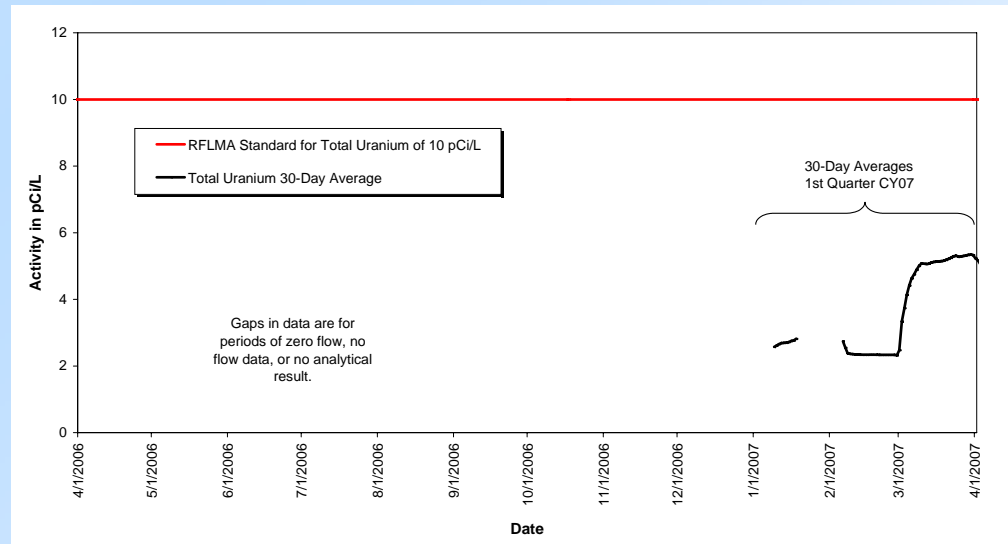


POC GS03

- Plutonium and Americium



- Total Uranium

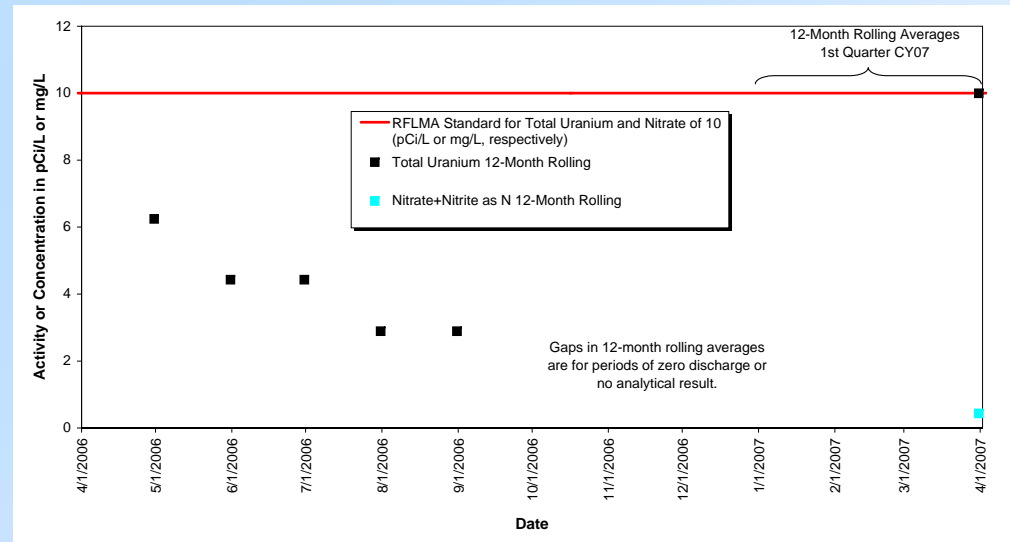
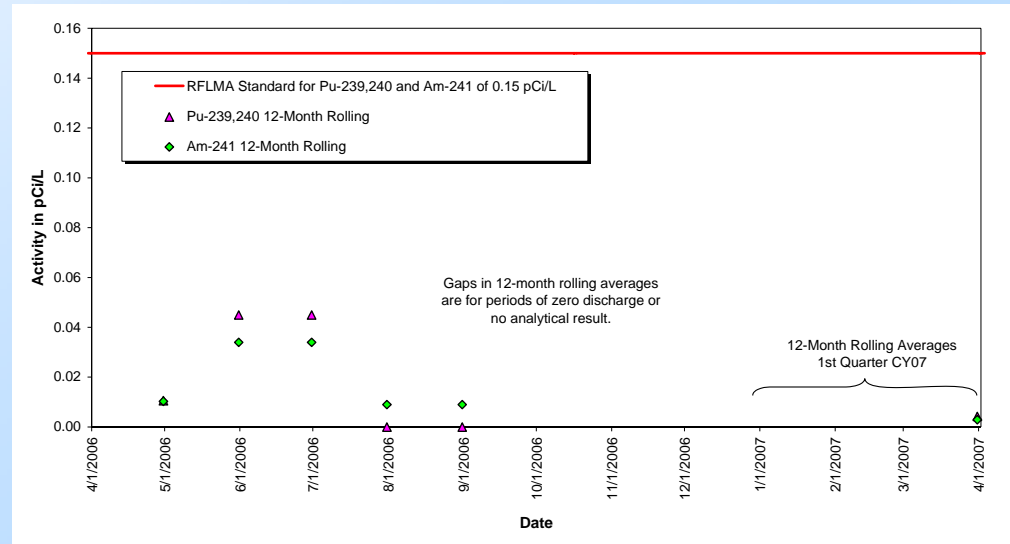


Compliance plots for nitrate+nitrite are not presented since 30-days of nitrate-nitrite sampling data have not occurred



POC GS08

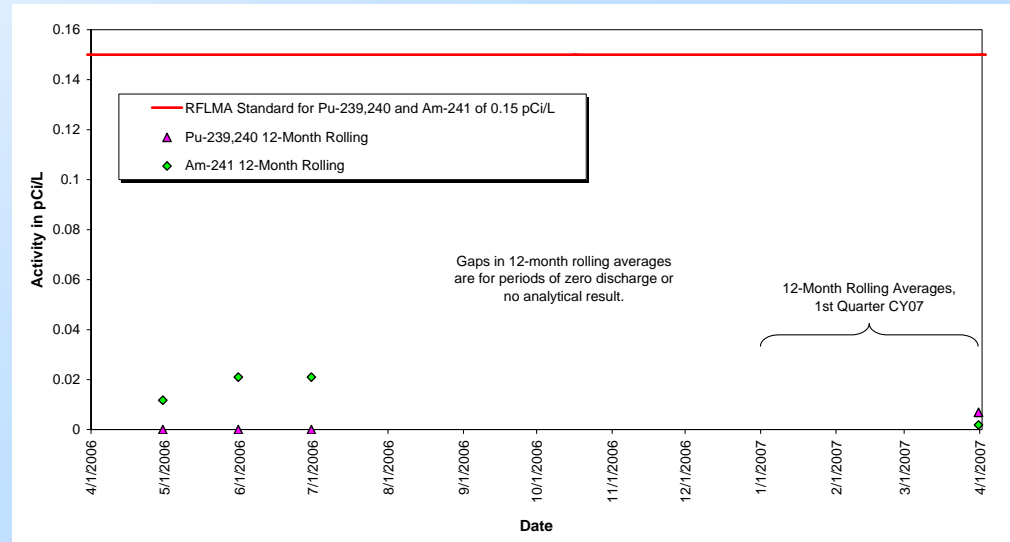
- Plutonium and Americium
- Total Uranium and Nitrate + Nitrite as N



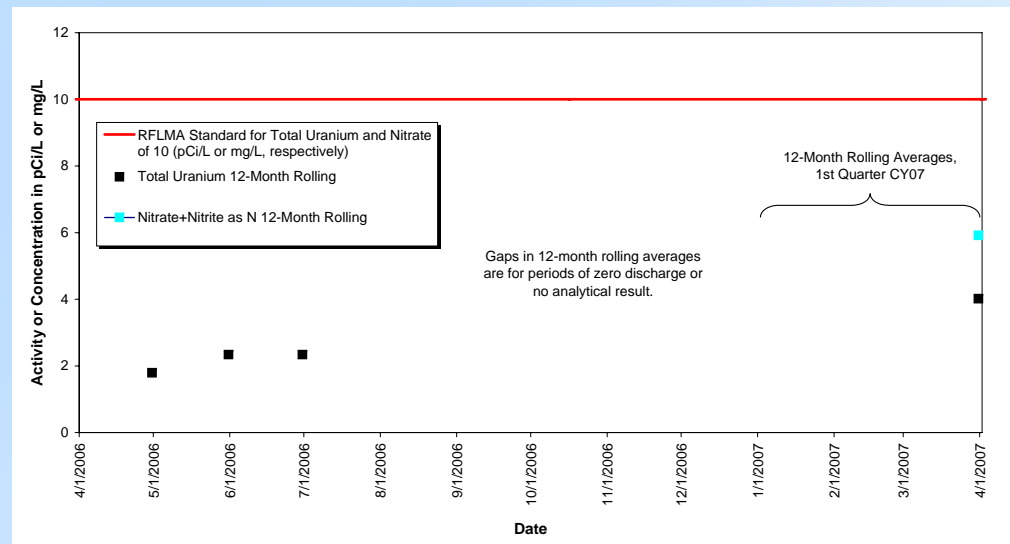


POC GS11

- Plutonium and Americium



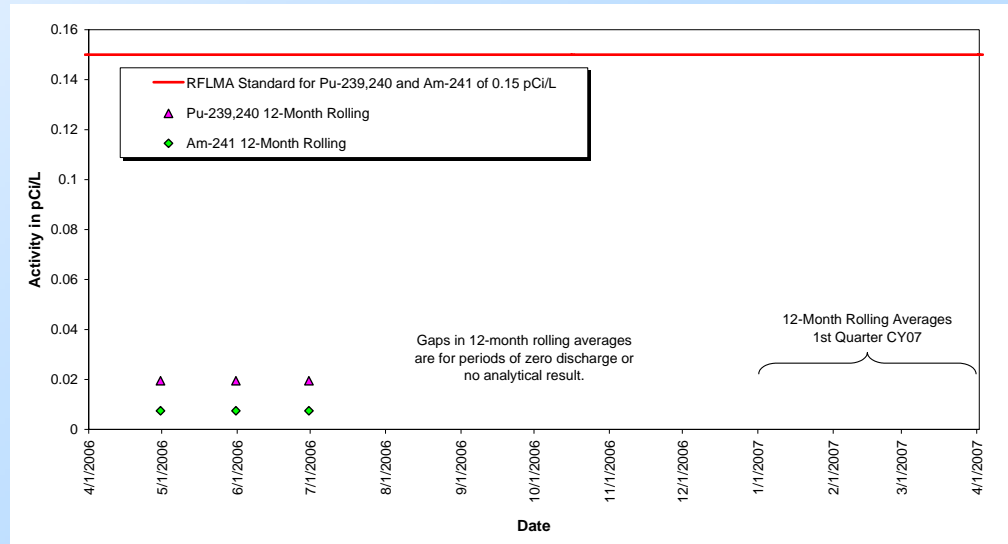
- Total Uranium and Nitrate + Nitrite as N



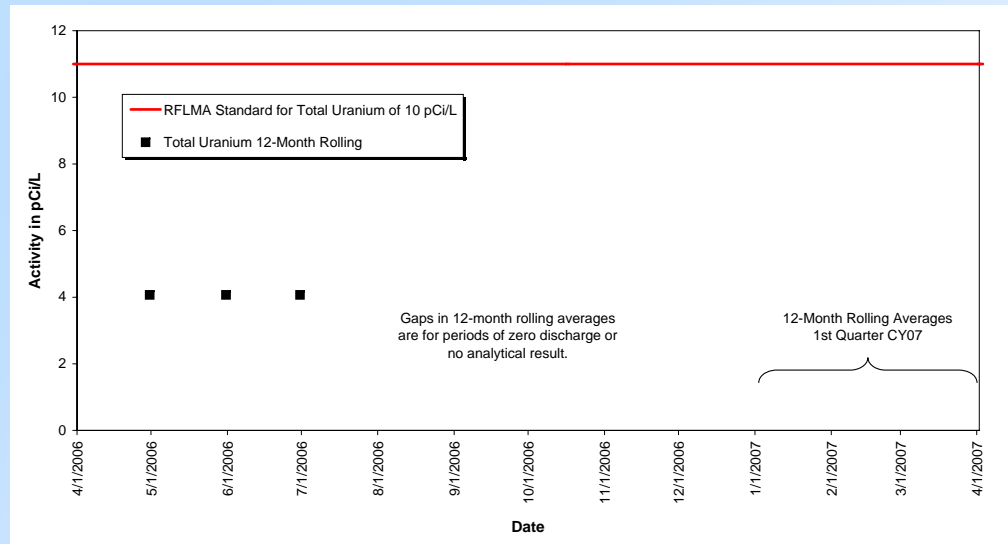


POC GS31

- Plutonium and Americium



- Total Uranium





Point of Evaluation (POE) Monitoring – 1st Quarter CY07

- Monitoring at RFCA POEs has continued uninterrupted since 10/1/96
 - GS10: S. Walnut Cr. Above B-Series Ponds
 - SW027: S. Interceptor Ditch Above Pond C-2
 - SW093: N. Walnut Cr. Above A-Series Ponds
- Reportable 12-month rolling averages for uranium were observed at POE GS10 for April 2006 through March 2007; an updated source evaluation summary is presented in the 1CQ07 Report
- All other water-quality data at the RFCA POEs remain well below the applicable action levels using all available data



Performance Monitoring – Original and Present Landfills

- Surface-water quality results supporting Original Landfill indicate remedy functioning properly
- Surface-water quality results supporting Present Landfill indicate remedy functioning properly





Ground Water 1st Quarter 2007



John Boylan

SM Stoller



Routine Monitoring

- RCRA wells
 - OLF
 - PLF
- Results will be evaluated in 2007 Annual



Additional Monitoring

- Sentinel well 45605
 - Due to precarious condition
 - Samples successfully collected
 - Will be evaluated in 2007 Annual Report
- SPPTS
 - Increased sampling following Sept. 2006 repairs
 - System continues to remove nitrate, uranium
 - Slight increase in concentrations as flow increased following heavy precipitation
- OU1 Plume wells
 - Per decision document, since superseded by RFLMA
 - Results consistent with previous data



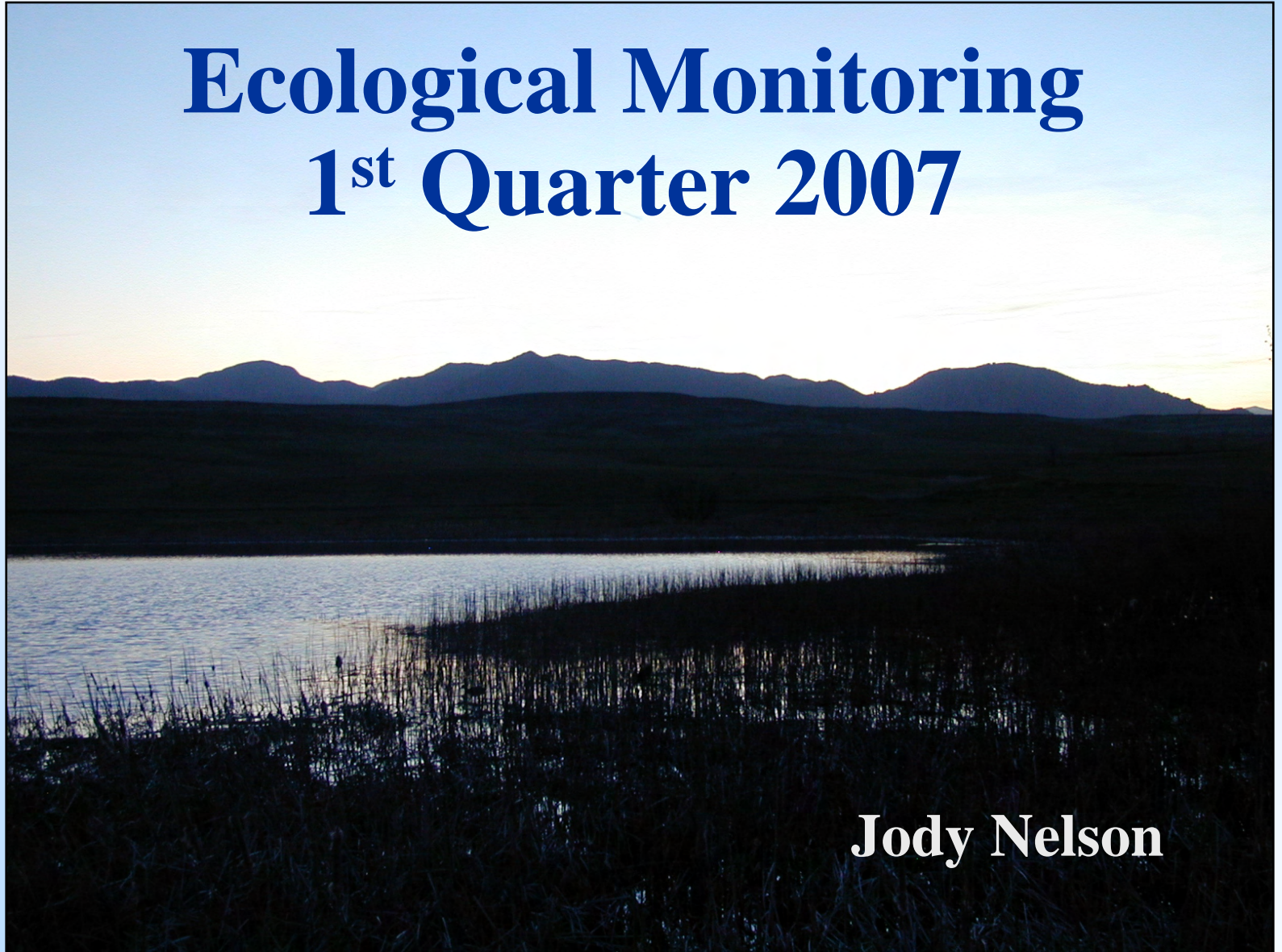
Sampling Demonstration

- Most ground water sampling is performed with a peristaltic pump
- Samples for analysis of metals, uranium, Pu/Am are filtered
- Samples for analysis of VOCs, SVOCs, nitrate are not filtered
- Demonstration and discussion:

Equipment/supplies	Pumping	Filtering
Bottles	Mock preservation	Documentation



Ecological Monitoring 1st Quarter 2007



Jody Nelson



Data Management and Regulatory Reporting

During the winter months much of the Ecology Work consists of writing and compiling reports from the data collected the previous field season.

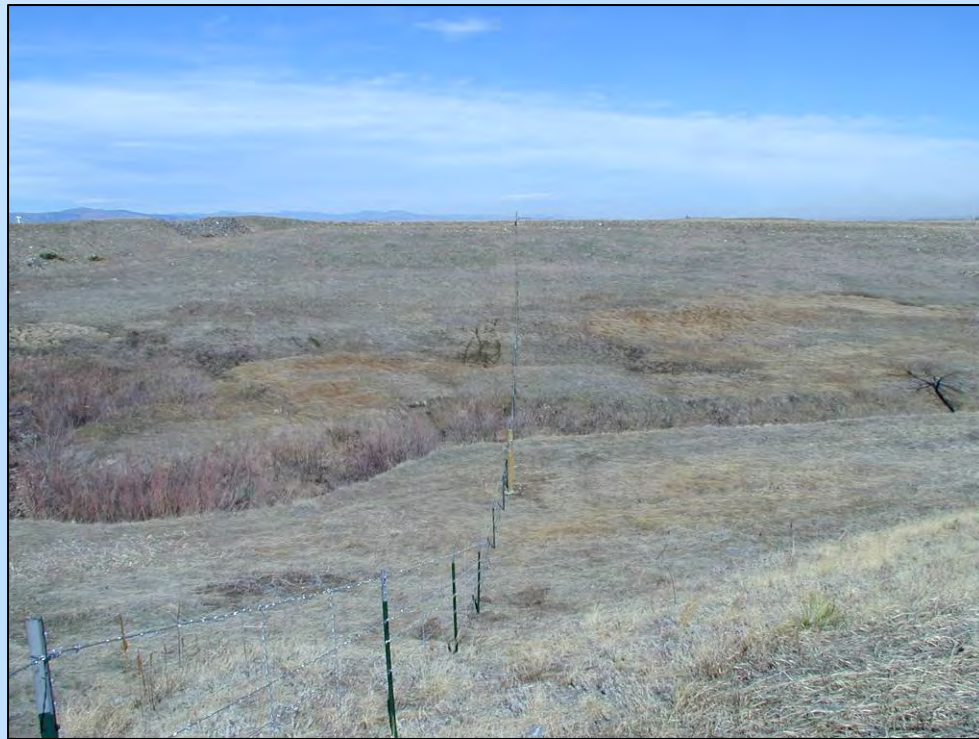
During the 1st Quarter of 2007, data entry, QA, analysis and summarization continued for several ecology datasets to prepare them for report writing.

The 2006 Annual Wetland Mitigation Monitoring Report was prepared and submitted to the EPA.



Regulatory Project Support

- The ecology staff provided support for the Solar Pond Discharge Gallery temporary flume installation and the Central Operable Unit fence construction.
- Vegetation surveys were conducted on the OLF and PLF.





Noxious Weed Control

- Planning began to evaluate weed control activities for 2007 field season.
- Amendment to the Biological Evaluation for weed control in PMJM habitat was written to improve the ability to control noxious weeds in PMJM habitat.





Revegetation

Approximately 69 acres of former roads and parking areas were revegetated using various soil amendments.



March 2007



June 2007



March 2007



June 2007





March 2007



July 2007





Wetland Plantings

- Approximately 450 bare root shrubs from the Colorado State Forestry Service were planted in and around the mitigation wetlands at the Site.
- 251 coyote willow stakes were installed along the slump line and the north pond edge at the PLF Pond.





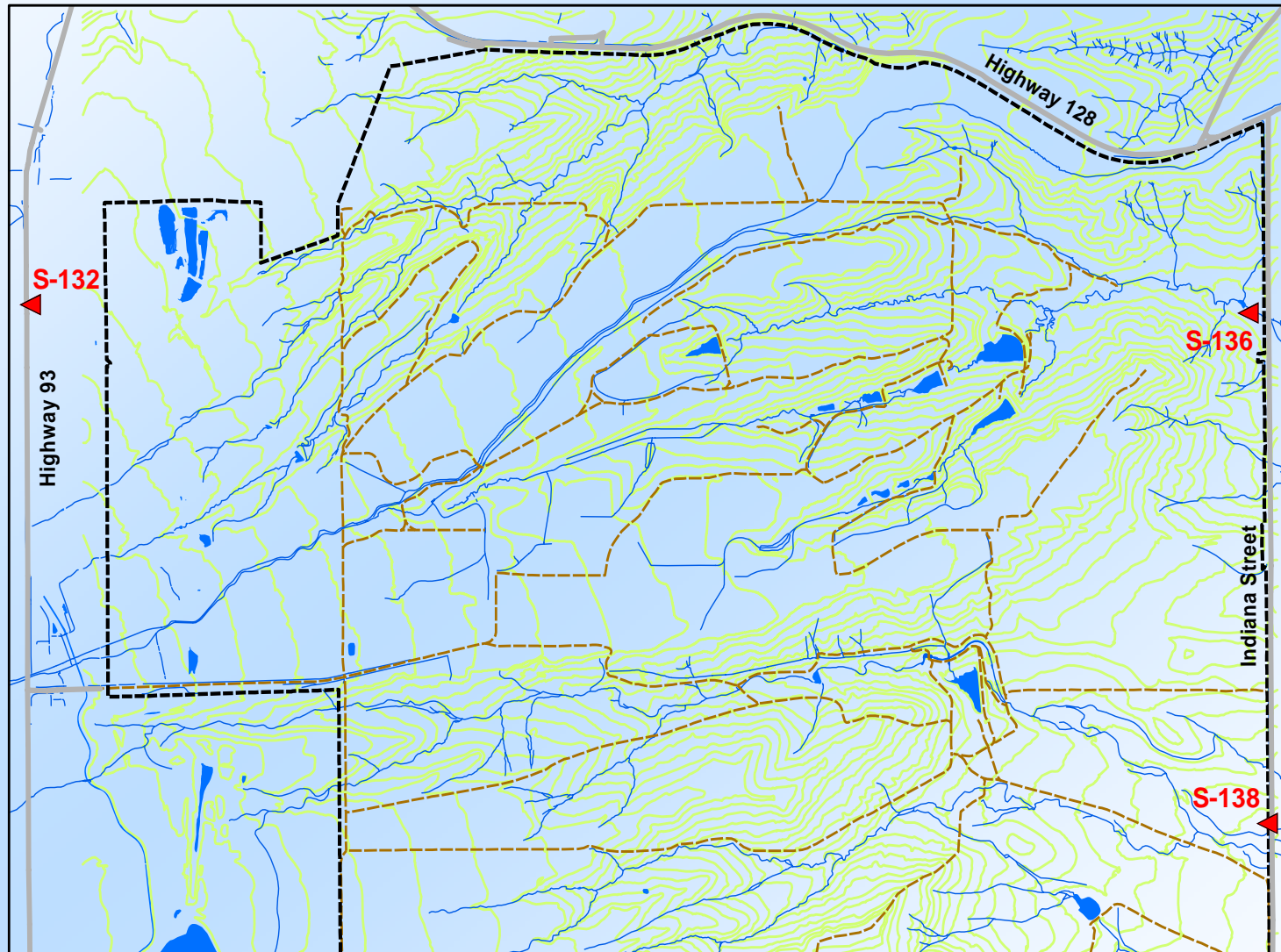
Questions?



Air Monitoring



Air Monitoring





Air Monitoring

- Since October 2006, samples at S-136 and S-138 are archived pending need for analysis.
- Sampling at S-132 has been discontinued.



Air Monitoring

- Measured isotopes (except for U) were generally below detection limits and not measurable.
- Airborne radionuclides were dominated by U- isotopes of natural origin.
- Lacking large-scale soil disturbances, potential air emissions are expected to remain at or below detection limits.



Site Operations and Maintenance 1st Quarter 2007





Site Operations

- **Present Landfill**

- Inspections performed January 18, February 14, March 27
- Vegetative cover inspected January 30, February 7, March 14
- Followed prescribed checklist in Monitoring and Maintenance Plan (May 2006)
- New slump was discovered east of Present Landfill on February 13
 - Inspected by Geo-technical engineer same day
 - Staked and mapped with GPS to monitor movement
- **No significant concerns**





Site Operations

- **Present Landfill - Settlement Monuments**

- Installed in August 2006
- 9 monuments across top of landfill
- 6 monuments on east face of landfill
- Monuments were surveyed in March 2007
 - Second quarterly survey
 - Movement within calculated settlement data





Site Operations

- **Original Landfill**

- Inspections performed Jan 18, Feb 7, March 26
- Veg cover inspected February 7
- Followed prescribed checklist in Monitoring and Maintenance Plan (Feb 2006)





Site Operations

- **Original Landfill**
 - Seeps #4 and #7
 - Both active in 1st Quarter
 - Directed flow along Berm #3
 - Outfall being pinched by WPC Slump





Site Operations

- **Original Landfill**
 - West Perimeter Ditch slump
 - Extended South to Berm #3
 - Field Surveyed with GPS
 - Staked slumping area
 - Photos





Site Operations

- **Original Landfill**

- **Berm #1 Slump**

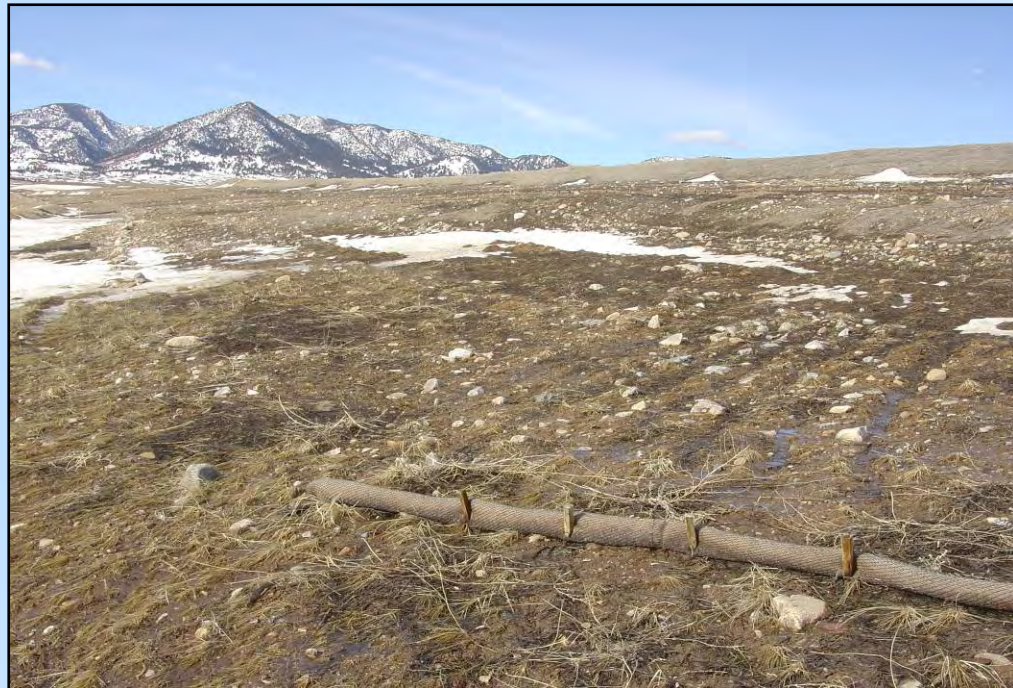
- Noticed February 7
- Covered with plastic and sand bags
- Submit action plan to CDPHE on March 8
- Filled and compacted berm #1 crack end of March





Site Operations

- **Original Landfill – Berm #4 Subsidence**
 - Discovered February 7
 - Staked and Surveyed
 - Inspected by Geotechnical Engineers February 12





Site Operations

- **Original Landfill - Settlement Monuments**
 - 5 monuments installed in March 2007
 - 3 monuments to be installed when cover dries





Site Operations

- **Annual Site Inspection**

- Performed March 19
 - Violation of Institutional Controls
 - Erosion
 - Settlement/Subsidence
 - Demolition Debris





Site Operations

- **Routine Site Inspections**

- Annually or after a “Significant Event”
 - Large Precipitation Event
 - Seismic Event
 - Deliberate Human Activity
- Document with Photos
- Use Applicable Expertise
 - Geotech Engineer
 - Geologist
 - Ecologist





Site Operations

- **Routine Site Inspections**
 - Groundwater Monitoring
 - Stormwater Management Structures
 - Functional Channels
 - Natural Drainages
 - Soil Cover/Erosion Control
 - Vegetation





Site Operations

- **Routine Site Inspections**

- Fences and Postings
- Site Markers and Monuments
- Monitoring Locations
- Landfills
- Ponds and Surface Water Features
- GW Treatment Systems
- Revegetation Areas





Site Operations

- **DOE Retained Land Fence construction**
 - Work suspended December 20, 2006 due to snow
 - Resumed February 22, 2007
 - Finished March 22, 2007
 - “No Trespassing” signs posted by March 23





Site Operations

- **Access/Security**

- Restricted surveillance patrols to outer perimeter roads
- No significant concerns





Site Operations

- **Road Upgrades**

- Road Band-Aid Project

- Uninterrupted travel through spring months
 - Started March 21
 - Completed April 3





Site Operations



Questions?

